Jiayou (Sam) Zhong

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Technical Skills

- **Programming:** C/C++/C#, DrRacket, Unity 3D,
- **Data Analysis:** Python (Pandas, NumPy), R, SQL, Tableau, Advanced Excel

Education

University of Waterloo *September 2022 – April 2026*

Bachelor of Computer Science, specialization in Business

- Awards: **President's Gold Scholarship** of $4,000 for achieving a 97% average, 2022; **Top 25%** of contestants in the *Senior Division* of Canadian Computing Competition
- Core courses: Object-Oriented Programming; Sequential Programming; Computer Systems; SQL; Statistics

Experience

Laurier Fintech **Waterloo, Ontario**

Algorithm Developer – [Website | GitHub] *October 2023 – Present*

- Implemented the backend algorithm of OpenFintech, a stock trading simulation tool in Python, leveraging the API for stock data integration, facilitating accurate backtesting of trading strategies
- Boosted trading accuracy by 40% by refining **trend-following stock trading** algorithms to integrate data, predicate stock price and generate various stock trend charts based on different requirements
- Improved efficiency by 30% through structuring a robust **SQLite3** database framework to manage user profiles, trade operations, and performance tracking

Uforse Education **Toronto, Ontario**

Computer Science part-time Instructor *May 2023 – Present*

- Guided and mentored several high school students to enhance their understanding of fundamental computer science concepts, algorithms, and prepare for computing contests.
- Ensured thorough comprehension by offering detailed Python code walkthroughs and consistent feedback
- Through my mentoring, students achieved positions within the top 25% of the CCC competition

Projects

Chess, *C++ – project link* *December 2023*

- Led a group of 3 to develop a C++ Chess game with 2 modes, Human vs. Human and AI vs. Human, securing 1st place in class
- Implemented all the chess pieces including Rook, King, and Pawn with different moving strategies, especially en passant, promotion and castling strategies and defined checkmate and stalemate mechanics
- Attained a 30% winning rate by utilizing Greedy algorithm and Reinforcement Learning strategy

AI Flappy Bird, *Python-NEAT and Pygame – project link* *June 2023*

- Utilized pygame to create an AI game where the bird can autonomously fly through randomly positioned pipes
- Implemented a pipe class to allow pipes to move horizontally with varying gap sizes and created methods to mimic bird movements
- Achieved a 100% success rate for AI birds to avoid pipes by training neural networks using NEAT algorithm

Fruit Ninga Game, *Unity 3D and C# – project link* *May 2023*

- Recreated the renowned Fruit Ninja game in Unity 3D, achieving a 100% replication of the original version
- Enhanced main features include dynamic fruit movements by using EdgeCollider2D and an enhanced slicing experience with motion controls
- Optimized the gameplay experience by incorporating immersive 3D and audio-visual effects